In the Claims

Please amend claims 1, 2, 4, 5, 11, 75 and 76 as set forth below:

1. (Currently Amended) An electron emission device comprising;

(a) a conductive layer with a carbon film selective-growth region formed on a surface thereof, and

(b) an electron emitting portion composed of a carbon film formed on the carbon film selective-growth region.

wherein the carbon film selective growth region is a portion of the conductive layer onto which at least one of metal particles, metal thin layer and organometallic compound thin layer adhere.

2. (Currently Amended) A cold cathode field emission device comprising;

(a) a cathode electrode formed on a supporting substrate. and;

(b) a first gate electrode which is formed above a first portion of the cathode electrode and has an opening portion;

(c) a second gate electrode formed above a second portion of the cathode electrode, the second portion of the cathode electrode separated from the first portion of the the cathode electrode by a third portion of the cathode electrode;

(d) a first opening portion between the first gate electrode and the second gate electrode, and

and further comprising;

(e)(c) an electron emitting portion composed ofhaving a carbon film formed on a surface of the third portion of the cathode electrode which portion is positioned in a bottom portion of the opening portion.

3. (Original) The cold cathode field emission device according to claim 2, in which the cathode electrode is composed of copper, silver or gold.

4. (Currently Amended) The cold cathode field emission device according to claim 2, in which the [illegible]

a first insulating layer formed on the supporting substrate and the first portion of the cathode electrode, [illegible]

a second insulating layer on the supporting substrate and the second portion of the cathode electrode, the second insulating layer situated at least between the second gate electrode and the second portion of the cathode electrode, and

a second opening portion between the first insulating layer and the second insulating layer, the second opening portion communicating with the first opening portion formed in thebetween the first and second gate electrodes is formed in the insulating layer.

5. (Currently Amended) A cold cathode field emission device comprising;

(a) a cathode electrode formed on a supporting substrate. and,

(b) a first gate electrode which is formed above a first portion of the cathode electrode and has an opening portion;

(c) a second gate electrode formed above a second portion of the cathode electrode, the second portion of the cathode electrode separated from the first portion of the cathode electrode by a third portion of the cathode electrode;

(d) a first opening portion between the first gate electrode and the second gate electrode

and further comprising:

(e)(c) a carbon film selective-growth region formed at least on a surface of athe third portion of the cathode electrode which portion is positioned in a bottom portion of the opening portion; and

(d)(f) an electron emitting portion composed ofhaving a carbon film formed on the carbon film selective-growth region.

6. (Original) The cold cathode field emission device according to claim 5, in which the carbon film selective-growth region is that portion of the cathode electrode onto the surface of which portion metal particles adhere, or that portion of the cathode electrode on the surface of which portion a metal thin layer or an organometallic compound thin layer is formed.

7. (Original) The cold cathode field emission device according to claim 6, in which the

metal particles are or the metal thin layer is composed of at least one metal selected from the group consisting of molybdenum, nickel, titanium, chromium, cobalt, tungsten, zirconium, tantalum, iron, copper, platinum, zinc, cadmium, mercury, germanium, tin, lead, bismuth, silver, gold, indium and thallium.

8. (Original) The cold cathode field emission device according to claim 6, in which the surface of the carbon film selective-growth region has sulfur, boron or phosphorus adhering thereto.

9. (Original) The cold cathode field emission device according to claim 6, in which the organometallic compound thin layer is formed from an organometallic compound containing at least one element selected from the group consisting of zinc, tin, aluminum, lead, nickel and cobalt.

10. (Original) The cold cathode field emission device according to claim 9, in which the organometallic compound thin layer is composed of a complex compound.

11. (Currently Amended) The cold cathode field emission device according to claim 5, in which it further comprising:

a first insulating layer is formed on the supporting substrate and the first portion of the cathode electrode, the first insulating layer situated at least between the first gate electrode and the first portion of the cathode electrode;

a second insulating layer on the supporting substrate and the second portion of the cathode electrode, the second insulating layer situated at least between the second gate electrode and the second portion of the cathode electrode; and

a second opening portion between the first insulating layer and the second insulating layer, the second opening portion communicating with the first opening portion formed in the first and second gate electrode is formed in the insulating layer, and the carbon film is positioned in a bottom portion of the second opening portion.

12. (Original) The cold cathode field emission device according to claim 6, in which the metal particles adhering onto the surface of the cathode electrode have an acicular form.

13. (Original) The cold cathode field emission device according to claim 12, in which the acicular metal particles are composed of at least one metal selected from the group consisting of copper, iron, tungsten, tantalum, titanium and zirconium.

14. (Original) A method for the production of a cold cathode field emission device, comprising the steps of;

(A) forming a cathode electrode on a supporting substrate,

(B) forming an insulating layer on the supporting substrate and the cathode electrode,

(C) forming a gate electrode having an opening portion on the insulating layer,

(D) forming, in the insulating layer, a second opening portion communicating with the opening portion formed in the gate electrode,

(E) forming a carbon film selective-growth region on a surface of a portion of the cathode electrode which portion is positioned in a bottom portion of the second opening portion, and

(F) forming a carbon film on the carbon film selective-growth region.

15. (Original) The method for the production of a cold cathode field emission device according to claim 14, in which the carbon film selective-growth region formation step comprises the steps of forming a mask layer with a surface of the cathode electrode which surface is exposed in a central portion of the bottom portion of the second opening portion, and then allowing metal particles to adhere onto, or forming a metal thin layer or an organometallic compound thin layer on, the mask layer and the exposed surface of the cathode electrode.

16. (Original) The method for the production of a cold cathode field emission device according to claim 14, in which the carbon film selective-growth region formation step comprises the step of allowing metal particles to adhere onto, or forming a metal thin layer or an organometallic compound thin layer on, the surface of the portion of the cathode electrode in which portion the carbon film selective-growth region is to be formed, whereby formed is the carbon film selective-growth region constituted of the portion of the cathode electrode which portion has the surface onto which the metal particles adhere or on which the metal thin layer or

the organometallic compound thin layer is formed.

17. (Original) The method for the production of a cold cathode field emission device according to claim 16, further including the step of adhering sulfur, boron or phosphorus onto the surface of the carbon film selective-growth region.

18. (Original) The method for the production of a cold cathode field emission device according to claim 16, in which after the metal particles are allowed to adhere onto, or the metal thin layer or the organometallic compound thin layer is formed on, the surface of the cathode electrode, a metal oxide on the surface of each metal particle or on the surface of the metal thin layer or the organometallic compound thin layer is removed.

19. (Original) The method for the production of a cold cathode field emission device according to claim 18, in which the metal oxide on the surface of each metal particle or on the surface of the metal thin layer or the organometallic compound thin layer is removed by plasma reduction treatment or by washing.

20. (Original) The method for the production of a cold cathode field emission device according to claim 16, in which the step for allowing the metal particles to adhere onto the surface of the portion of the cathode electrode in which portion the carbon film selective-growth region is to be formed comprises the steps of forming a layer composed of a solvent and the metal particles on the surface of the portion of the cathode electrode in which portion the carbon film selective-growth region is to be formed, and then, removing the solvent while retaining the metal particles.

21. (Original) The method for the production of a cold cathode field emission device according to claim 16, in which the step for allowing the metal particles to adhere onto the surface of the portion of the cathode electrode in which portion the carbon film selective-growth region is to be formed comprises the steps of adhering metal compound particles containing metal atoms constituting the metal particles onto the surface of the portion of the cathode electrode in which portion the carbon film selective-growth region is to be formed, and then heating the metal compound particles to decompose them, whereby formed is the carbon film

selective-growth region constituted of the portion of the cathode electrode which portion has the surface onto which the metal particles adhere.

22. (Original) The method for the production of a cold cathode field emission device according to claim 21, in which the step of allowing the metal particles to adhere onto the surface of the portion of the cathode electrode in which portion the carbon film selective-growth region is to be formed comprises the steps of forming a layer composed of a solvent and metal compound particles on the surface of the portion of the cathode electrode in which portion the carbon film selective-growth region is to be formed, and then removing the solvent while retaining the metal compound particles.

23. (Original) The method for the production of a cold cathode field emission device according to claim 21, in which the metal compound particles are composed of at least one material selected from the group consisting of halides, oxides and hydroxides of the metal constituting the metal particles.

24. (Original) The method for the production of a cold cathode field emission device according to claim 16, in which the metal particles are or the metal thin layer is composed of at least one metal selected from the group consisting of molybdenum, nickel, titanium, chromium, cobalt, tungsten, zirconium, tantalum, iron, copper, platinum, zinc, cadmium, mercury, germanium, tin, lead, bismuth, silver, gold, indium and thallium.

25. (Original) The method for the production of a cold cathode field emission device according to claim 16, in which the step of allowing the metal particles to adhere onto the surface of the portion of the cathode electrode in which portion the carbon film selective-growth region is to be formed comprises the step of sublimating a metal compound to deposit acicular metal particles composed of a metal constituting the metal compound on the surface of the portion of the cathode electrode in which portion the carbon film selective-growth region is to be formed.

26. (Original) The method for the production of a cold cathode field emission device according to claim 25, in which the acicular metal particles are composed of at least one metal selected from the group consisting of copper, iron, tungsten, tantalum, titanium and zirconium.

27. (Original) The method for the production of a cold cathode field emission device according to claim 16, in which the step of forming the organometallic compound thin layer on the surface of the portion of the cathode electrode in which portion the carbon film selective-growth region is to be formed comprises the step of forming a layer composed of an organometallic compound solution on the cathode electrode.

28. (Original) The method for the production of a cold cathode field emission device according to claim 27, in which the organometallic compound thin layer is composed of an organometallic compound containing at least one element selected from the group consisting of zinc, tin, aluminum, lead, nickel and cobalt.

29. (Original) The method for the production of a cold cathode field emission device according to claim 28, in which the organometallic compound thin layer is composed of a complex compound.

30. (Original) The method for the production of a cold cathode field emission device according to claim 16, in which the step of forming the organometallic compound thin layer on the surface of the portion of the cathode electrode in which portion the carbon film selective-growth region is to be formed comprises the step of sublimating an organometallic compound to deposit it on the cathode electrode.

31. (Original) The method for the production of a cold cathode field emission device according to claim 30, in which the organometallic compound thin layer is composed of an organometallic compound containing at least one element selected from the group consisting of zinc, tin, aluminum, lead, nickel and cobalt.

32. (Original) The method for the production of a cold cathode field emission device according to claim 31, in which the organometallic compound thin layer is composed of a complex compound.

33. (Original) The method for the production of a cold cathode field emission device

according to claim 16, in which the step for forming the metal thin layer on the surface of the portion of the cathode electrode in which portion the carbon film selective-growth region is to be formed comprises a method of pyrolyzing an organometallic compound, a plating method, a chemical vapor deposition method or a physical vapor deposition method.

34. (Original) A method for the production of a cold cathode field emission device, comprising the steps of;

(A) forming a cathode electrode on a supporting substrate,

(B) forming a carbon film selective-growth region on a surface of the cathode electrode,

(C) forming a carbon film on the carbon film selective-growth region, and

(D) forming a gate electrode having an opening portion above the carbon film.

35. (Original) The method for the production of a cold cathode field emission device according to claim 34, in which the step (C) is followed by forming an insulating layer on the entire surface, and the step (D) is followed by forming, in the insulating layer, a second opening portion communicating the opening portion formed in the gate electrode and exposing the carbon film in a bottom portion of the second opening portion.

36. (Original) The method for the production of a cold cathode field emission device according to claim 34, in which the carbon film selective-growth region formation step comprises the step of allowing metal particles to adhere onto, or forming a metal thin layer or an organometallic compound thin layer on, the surface of a portion of the cathode electrode in which portion the carbon film selective-growth region is to be formed, whereby formed is the carbon film selective-growth region constituted of the portion of the cathode electrode which portion has the surface onto which the metal particles adhere or on which the metal thin layer or the organometallic compound thin layer is formed.

37. (Original) The method for the production of a cold cathode field emission device according to claim 36, further including the step of adhering sulfur, boron or phosphorus onto the surface of the carbon film selective-growth region.

38. (Original) The method for the production of a cold cathode field emission device according to claim 36, in which after the metal particles are allowed to adhere onto, or the metal thin layer or the organometallic compound thin layer is formed on, the surface of the cathode electrode, a metal oxide on the surface of each metal particle or on the surface of the metal thin layer or the organometallic compound thin layer is removed.

39. (Original) The method for the production of a cold cathode field emission device according to claim 38, in which the metal oxide on the surface of each metal particle or on the surface of the metal thin layer or the organometallic compound thin layer is removed by plasma reduction treatment or by washing.

40. (Original) The method for the production of a cold cathode field emission device according to claim 36, in which the step for allowing the metal particles to adhere onto the surface of a portion of the cathode electrode in which portion the carbon film selective-growth region is to be formed comprises the steps of forming a layer composed of a solvent and the metal particles on the surface of the portion of the cathode electrode in which portion the carbon film selective-growth region is to be formed, and then, removing the solvent while retaining the metal particles.

41. (Original) The method for the production of a cold cathode field emission device according to claim 36, in which the step for allowing the metal particles to adhere onto the surface of a portion of the cathode electrode in which portion the carbon film selective-growth region is to be formed comprises the steps of adhering metal compound particles containing metal atoms constituting the metal particles onto the surface of the portion of the cathode electrode in which portion the carbon film selective-growth region is to be formed, and then heating the metal compound particles to decompose them, whereby formed is the carbon film selective-growth region constituted of the portion of the cathode electrode which portion has the surface onto which the metal particles adhere.

42. (Original) The method for the production of a cold cathode field emission device according to claim 41, in which the step of allowing the metal particles to adhere onto the surface of a portion of the cathode electrode in which portion the carbon film selective-growth region is

to be formed comprises the steps of forming a layer composed of a solvent and metal compound particles on the surface of the portion of the cathode electrode in which portion the carbon film selective-growth region is to be formed, and then removing the solvent while retaining the metal compound particles.

43. (Original) The method for the production of a cold cathode field emission device according to claim 41, in which the metal compound particles are composed of at least one material selected from the group consisting of halides, oxides and hydroxides of the metal constituting the metal particles.

44. (Original) The method for the production of a cold cathode field emission device according to claim 36, in which the metal particles are or the metal thin layer is composed of at least one metal selected from the group consisting of molybdenum, nickel, titanium, chromium, cobalt, tungsten, zirconium, tantalum, iron, copper, platinum, zinc, cadmium, mercury, germanium, tin, lead, bismuth, silver, gold, indium and thallium.

45. (Original) The method for the production of a cold cathode field emission device according to claim 36, in which the step of allowing the metal particles to adhere onto the surface of a portion of the cathode electrode in which portion the carbon film selective-growth region is to be formed comprises the step of sublimating a metal compound to deposit acicular metal particles composed of a metal constituting the metal compound on the surface of the portion of the cathode electrode in which portion the carbon film selective-growth region is to be formed.

46. (Original) The method for the production of a cold cathode field emission device according to claim 45, in which the acicular metal particles are composed of at least one metal selected from the group consisting of copper, iron, tungsten, tantalum, titanium and zirconium.

47. (Original) The method for the production of a cold cathode field emission device according to claim 36, in which the step of forming the organometallic compound thin layer on the surface of a portion of the cathode electrode in which portion the carbon film selective-growth region is to be formed comprises the step of forming a layer composed of an organometallic compound solution on the cathode electrode.

48. (Original) The method for the production of a cold cathode field emission device according to claim 47, in which the organometallic compound thin layer is composed of an organometallic compound containing at least one element selected from the group consisting of zinc, tin, aluminum, lead, nickel and cobalt.

49. (Original) The method for the production of a cold cathode field emission device according to claim 48, in which the organometallic compound thin layer is composed of a complex compound.

50. (Original) The method for the production of a cold cathode field emission device according to claim 36, in which the step of forming the organometallic compound thin layer on the surface of a portion of the cathode electrode in which portion the carbon film selective-growth region is to be formed comprises the step of sublimating an organometallic compound to deposit it on the cathode electrode.

51. (Original) The method for the production of a cold cathode field emission device according to claim 50, in which the organometallic compound thin layer is composed of an organometallic compound containing at least one element selected from the group consisting of zinc, tin, aluminum, lead, nickel and cobalt.

52. (Original) The method for the production of a cold cathode field emission device according to claim 51, in which the organometallic compound thin layer is composed of a complex compound.

53. (Original) The method for the production of a cold cathode field emission device according to claim 36, in which the step for forming the metal thin layer on the surface of a portion of the cathode electrode in which portion the carbon film selective-growth region is to be formed comprises a method of pyrolyzing an organometallic compound, a plating method, a chemical vapor deposition method or a physical vapor deposition method.

54. (Original) A method for the production of a cold cathode field emission device,

comprising the steps of;

(A) forming a cathode electrode on a supporting substrate,

(B) forming a carbon film selective-growth region on a surface of the cathode electrode,

(C) forming a gate electrode having an opening portion above the carbon film selective-growth region, and

(D) forming a carbon film on the carbon film selective-growth region.

55. (Original) The method for the production of a cold cathode field emission device according to claim 54, in which the step (B) is followed by forming an insulating layer on the entire surface, and the step (C) is followed by forming, in the insulating layer, a second opening portion communicating the opening portion formed in the gate electrode and exposing the carbon film in a bottom portion of the second opening portion.

56. (Original) The method for the production of a cold cathode field emission device according to claim 54, in which the carbon film selective-growth region formation step comprises the step of allowing metal particles to adhere onto, or forming a metal thin layer or an organometallic compound thin layer on, the surface of a portion of the cathode electrode in which portion the carbon film selective-growth region is to be formed, whereby formed is the carbon film selective-growth region constituted of the portion of the cathode electrode which portion has the surface onto which the metal particles adhere or on which the metal thin layer or the organometallic compound thin layer is formed.

57. (Original) The method for the production of a cold cathode field emission device according to claim 56, further including the step of adhering sulfur, boron or phosphorus onto the surface of the carbon film selective-growth region.

58. (Original) The method for the production of a cold cathode field emission device according to claim 56, in which after the metal particles are allowed to adhere onto, or the metal thin layer or the organometallic compound thin layer is formed on, the surface of the cathode electrode, a metal oxide on the surface of each metal particle or on the surface of the metal thin layer or the organometallic compound thin layer is removed.

59. (Original) The method for the production of a cold cathode field emission device according to claim 58, in which the metal oxide on the surface of each metal particle or on the surface of the metal thin layer or the organometallic compound thin layer is removed by plasma reduction treatment or by washing.

60. (Original) The method for the production of a cold cathode field emission device according to claim 56, in which the step for allowing the metal particles to adhere onto the surface of a portion of the cathode electrode in which portion the carbon film selective-growth region is to be formed comprises the steps of forming a layer composed of a solvent and the metal particles on the surface of the portion of the cathode electrode in which portion the carbon film selective-growth region is to be formed, and then, removing the solvent while retaining the metal particles.

61. (Original) The method for the production of a cold cathode field emission device according to claim 56, in which the step for allowing the metal particles to adhere onto the surface of a portion of the cathode electrode in which portion the carbon film selective-growth region is to be formed comprises the steps of adhering metal compound particles containing metal atoms constituting the metal particles onto the surface of the portion of the cathode electrode in which portion the carbon film selective-growth region is to be formed, and then heating the metal compound particles to decompose them, whereby formed is the carbon film selective-growth region constituted of the portion of the cathode electrode which portion has the surface onto which the metal particles adhere.

62. (Original) The method for the production of a cold cathode field emission device according to claim 61, in which the step of allowing the metal particles to adhere onto the surface of a portion of the cathode electrode in which portion the carbon film selective-growth region is to be formed comprises the steps of forming a layer composed of a solvent and metal compound particles on the surface of the portion of the cathode electrode in which portion the carbon film selective-growth region is to be formed, and then removing the solvent while retaining the metal compound particles.

63. (Original) The method for the production of a cold cathode field emission device according to claim 61, in which the metal compound particles are composed of at least one material selected from the group consisting of halides, oxides and hydroxides of the metal constituting the metal particles.

64. (Original) The method for the production of a cold cathode field emission device according to claim 56, in which the metal particles are or the metal thin layer is composed of at least one metal selected from the group consisting of molybdenum, nickel, titanium, chromium, cobalt, tungsten, zirconium, tantalum, iron, copper, platinum, zinc, cadmium, mercury, germanium, tin, lead, bismuth, silver, gold, indium and thallium.

65. (Original) The method for the production of a cold cathode field emission device according to claim 56, in which the step of allowing the metal particles to adhere onto the surface of a portion of the cathode electrode in which portion the carbon film selective-growth region is to be formed comprises the step of sublimating a metal compound to deposit acicular metal particles composed of a metal constituting the metal compound on the surface of the portion of the cathode electrode in which portion the carbon film selective-growth region is to be formed.

66. (Original) The method for the production of a cold cathode field emission device according to claim 65, in which the acicular metal particles are composed of at least one metal selected from the group consisting of copper, iron, tungsten, tantalum, titanium and zirconium.

67. (Original) The method for the production of a cold cathode field emission device according to claim 56, in which the step of forming the organometallic compound thin layer on the surface of a portion of the cathode electrode in which portion the carbon film selective-growth region is to be formed comprises the step of forming a layer composed of an organometallic compound solution on the cathode electrode.

68. (Original) The method for the production of a cold cathode field emission device according to claim 67, in which the organometallic compound thin layer is composed of an organometallic compound containing at least one element selected from the group consisting of zinc, tin, aluminum, lead, nickel and cobalt.

69. (Original) The method for the production of a cold cathode field emission device according to claim 68, in which the organometallic compound thin layer is composed of a complex compound.

70. (Original) The method for the production of a cold cathode field emission device according to claim 56, in which the step of forming the organometallic compound thin layer on the surface of a portion of the cathode electrode in which portion the carbon film selective-growth region is to be formed comprises the step of sublimating an organometallic compound to deposit it on the cathode electrode.

71. (Original) The method for the production of a cold cathode field emission device according to claim 70, in which the organometallic compound thin layer is composed of an organometallic compound containing at least one element selected from the group consisting of zinc, tin, aluminum, lead, nickel and cobalt.

72. (Original) The method for the production of a cold cathode field emission device according to claim 71, in which the organometallic compound thin layer is composed of a complex compound.

73. (Original) The method for the production of a cold cathode field emission device according to claim 56, in which the step for forming the metal thin layer on the surface of a portion of the cathode electrode in which portion the carbon film selective-growth region is to be formed comprises a method of pyrolyzing an organometallic compound, a plating method, a chemical vapor deposition method or a physical vapor deposition method.

74. (Original) A cold cathode field emission display comprising a plurality of pixels,

each pixel comprising a cold cathode field emission device, an anode electrode and a fluorescent layer, the anode electrode and the fluorescent layer being formed on a substrate so as to be opposed to the cold cathode field emission device, and

the cold cathode field emission device comprising:

(a) a conductive layer with a carbon film selective-growth region formed on a

surface thereof, and

(b) an electron emitting portion composed of a carbon film formed on the carbon film selective-growth region.

75. (Currently Amended) A cold cathode field emission display comprising a plurality of pixels, each pixel comprising a cold cathode field emission device, an anode electrode and a fluorescent layer, the anode electrode and the fluorescent layer being formed on a substrate so as to be opposed to the cold cathode field emission device, and

the cold cathode field emission device comprising;

(a) a cathode electrode formed on a supporting substrate, and,

(b) a first gate electrode which is formed above a first portion of the cathode electrode and has an opening portion,

(c) a second gate electrode formed above a second portion of the cathode electrode, the second portion of the cathode electrode separated from the first portion of the cathode electrode by a third portion of the cathode electrode;

(d) an opening portion between the first gate electrode and the second gate electrodes; and

and further comprising

(e)(c) an electron emitting portion composed of having a carbon film formed on a surface of the third portion of the cathode electrode which portion is positioned in a bottom portion of the opening portion.

76. (Currently Amended) A cold cathode field emission display comprising a plurality of pixels, each pixel comprising a cold cathode field emission device, an anode electrode and a fluorescent layer, the anode electrode and the fluorescent layer being formed on a substrate so as to be opposed to the cold cathode field emission device, and

the cold cathode field emission device comprising;

(a) a cathode electrode formed on a supporting substrate,

(b) a first gate electrode which is formed above a first portion of the cathode electrode and has an opening portion,

(c) a second gate electrode formed above a second portion of the cathode electrode, the second portion of the cathode electrode separated from the first portion of the

a carbon film selective-growth region formed at least on a surface of a portion of the cathode electrode which portion is positioned in a bottom portion of the opening portion; and

an electron emitting portion composed of a carbon film formed on the carbon film selective-growth region.

77. (Original) A method for the production of a cold cathode field emission display, comprising arranging a substrate having an anode electrode and a fluorescent layer formed thereon and a supporting substrate having a cold cathode field emission device formed thereon, such that the fluorescent layer and the cold cathode field emission device are opposed to each other, and bonding the substrate and the supporting substrate in circumferential portions thereof,

wherein the cold cathode field emission device is produced by a method comprising the steps of;

(A) forming a cathode electrode on a supporting substrate,

(B) forming an insulating layer on the supporting substrate and the cathode electrode,

(C) forming a gate electrode having an opening portion on the insulating layer,

(D) forming, in the insulating layer, a second opening portion communicating with the opening portion formed in the gate electrode,

(E) forming a carbon film selective-growth region on a surface of a portion of the cathode electrode which portion is positioned in a bottom portion of the second opening portion, and

(F) forming a carbon film on the carbon film selective-growth region.

78. (Original) A method for the production of a cold cathode field emission display, comprising arranging a substrate having an anode electrode and a fluorescent layer formed thereon and a supporting substrate having a cold cathode field emission device formed thereon, such that the fluorescent layer and the cold cathode field emission device are opposed to each other, and bonding the substrate and the supporting substrate in circumferential portions thereof,

wherein the cold cathode field emission device is produced by a method comprising the steps of;

(A) forming a cathode electrode on a supporting substrate,

(B) forming a carbon film selective-growth region on a surface of the cathode electrode,

(C) forming a carbon film on the carbon film selective-growth region, and

(D) forming a gate electrode having an opening portion above the carbon film.

79. (Original) A method for the production of a cold cathode field emission display, comprising arranging a substrate having an anode electrode and a fluorescent layer formed thereon and a supporting substrate having a cold cathode field emission device formed thereon, such that the fluorescent layer and the cold cathode field emission device are opposed to each other, and bonding the substrate and the supporting substrate in circumferential portions thereof,

wherein the cold cathode field emission device is produced by a method comprising the steps of;

(A) forming a cathode electrode on a supporting substrate,

(B) forming a carbon film selective-growth region on a surface of the cathode electrode,

(C) forming a gate electrode having an opening portion above the carbon film selective-growth region, and

(D) forming a carbon film on the carbon film selective-growth region.